



Use for rough work

Q. No. 2 Part (i)

Binary System:-

⇒ Binary numbers system contain two values (0s and 1s). It has Base of 2. It is very useful in computer System. 0 are off bits and 1 are on.

In Computers:-

Bianary System is used in computes because every data is visualized in form of 0s and 1s. Eevery letter is stored in form of Binary. Eg:- A is stored as 10.

Q. No. 2 Part (ii)

Real-World Business Problems

- These are actual issues faced by companies:-
  - Low Sales
  - Customer dissatisfaction.
- Role of Data Science:-
  - Analize data to find causes
  - Suggest solution to improve performance.

Q. No. 2 Part (iii)

Searching Algorithm

- A searching algorithm is a step-by-step method used to find a specific item in a list or database.

Example:-

Linear Search.

Importance

- Help quickly to locate required data. Check one by one.
- Simple but slower for large data used in apps and data bases.

Q. No. 2 Part (iv)

Tecnology used in front-end development

The developer used various tecnologies to develop the front-end of website. following are some:-

- → CSS — Add Styles
- → Javascript — Create Structure
- → HTML — Add interactivity

Q. No. 2 Part (v)

System Software

→ It manages hardware and System resources.
→ Controles overall system operations and provide a platform for Appalication to run.
→ Essensial for overall functioning of the Complex System.

→ Example:- Window and Linux etc.

Q. No. 2 Part (vi)

Scope of Data Science.

→ **Healthcare** help doctors to predicts deasies by studing the patient reports like X-ray or ultrasoonds.
→ **Sports** It can pridicts the match results by cheaking the pre-performance of player.
→ **Finance** It helps to detects fraud and better investment stertigies.

Q. No. 2 Part (vii)

Are Conditions For Binary Search:-

→ This method work only on Sorted lists.
→ It reapeatly divide the list into two halves and also compare the element with list of target values.

It is very fast and efficent for large data sets.

Q. No. 2 Part (viii)

Abstraction in Program development:

Abstraction means showing only important features and hiding unnecessary details.

Importance:

- Reduces program complexity.
- Make code easier to understand.
- Help users to focus on logic not details.

Using functions without knowing their internal code is example.

Q. No. 2 Part (ix)

Types of Data Visualization

Following are the types of data visualization:-

- Quantitative data Visualization
- Temporal data Visualization
- Categorical Visualization
- Multi variate Visualization.
- Spatial data Visualization.

These are common types of Data Visualization.

Q. No. 2 Part (x)

Churn Prediction in business

- Churn Prediction is a method to find the possabilites of customers to stop taking services or products of a certain company.

→ In business, A company consider a telecommunication company recieve complaint from customer frequently and then this can predict the customers reviews or stop taking the services these unhappy customers of company switch to others.

Q. No. 2 Part (xi)

Information security important on the Internet:-

Information security and privacy is very important aspect on internet:

- Protect personal and business data
- Prevents hacking, fraud and identify theft.

Q. No. 3 (Page 1)

LONG QUESTION

Role of Software development in:

Translator A translator is a type of System Software that converts a programs written in high-level language into machine language so that the computer can understand and execute it.

Importance:

- make programming easier
- Allow humans to writes code in simple language.

Integrated development environment is a software application that provide all tools needed for programing in one place.

Importance

- It increase productivity
- Help to detect errors quickly.
- Provides user friendly- interface.

Code Repository A code Repository is a storge location which developes Save and Manage ther code.

Importance

- It keeps code organised
- It allow team work
- It prevent data loss

Q. No. 3 (Page 2)

Debugger It is a tool used to find and fix errors in a program.

Importance

- Improve program quality
- Help programmers to understand code behaviour.

Language Editor A language editor tool used to write and edit programing code

Importance

- It make the code easier
- Reduces mistakes and Improve readability.

Q. No. 4 (Page 1)

LONG QUESTION

Trace Tables-

⟨◆⟩ [3, 1, 4, 1, 5, 9, 2, 6]

By using Abstraction and Data integration.

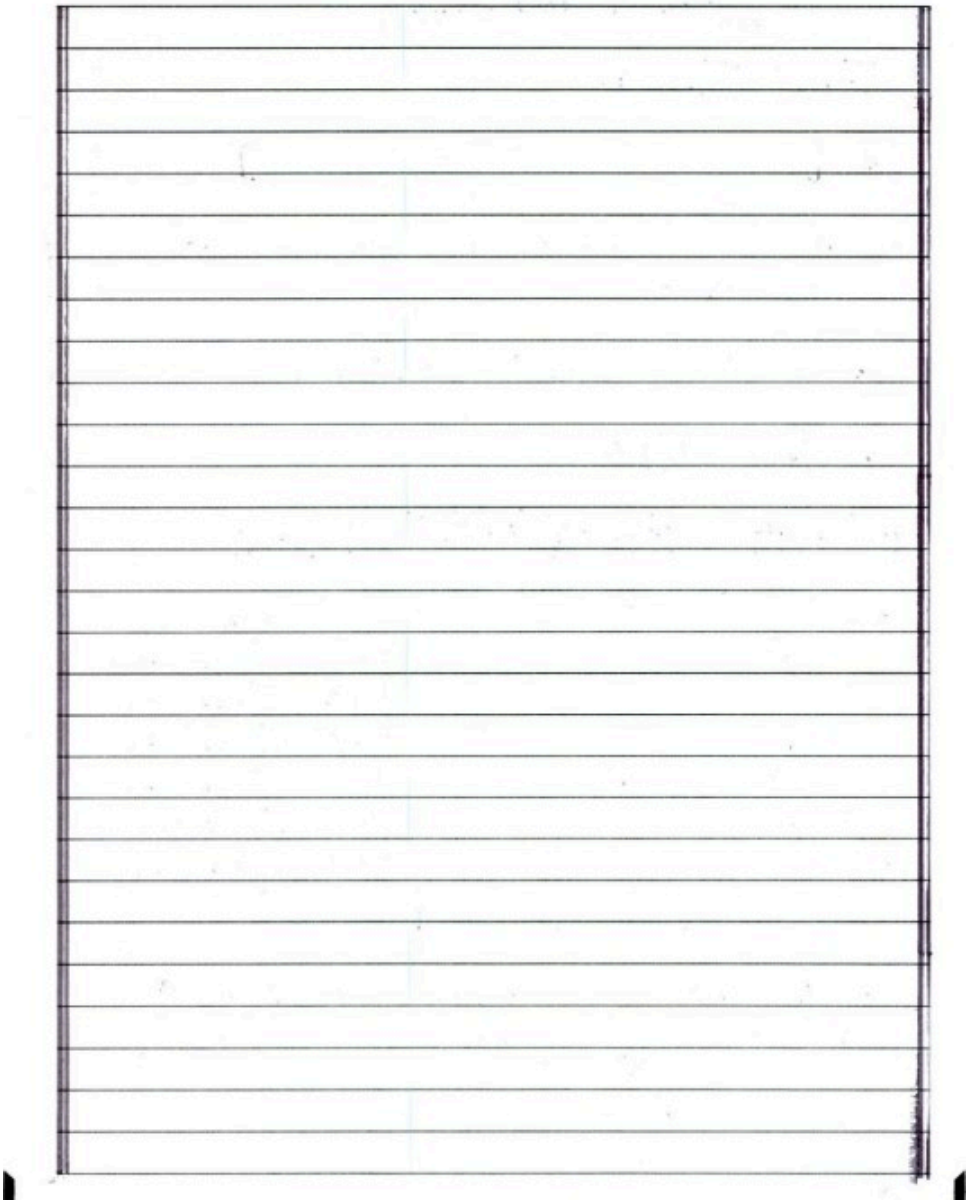
→ [3, 1, 4, 5, 9, 2, 6]

- Trace Table

#	Initial	Final Value	Updated Value	Results
1	3	3	3	3=3 updated to 3
2	3	1	3	3>1 updated to 3
3	3	4	4	3<4 updated to 4
4	4	5	5	4<5 updated to 5
5	5	9	9	5<9 updated to 9
6	9	2	9	9>9 updated to 9
7	9	6	9	9>6 updated to 9

- So, the trace table show that 9 is the largest value.

Q. No. 4 (Page 2)



Q. No. 5 (Page 1)

LONG QUESTION

Internet of Things :- The internet of thing is a system in which physical device like Smart watches home appliances and vichels are connected to the internet and collect, Share and act as atomatic.

SENSORS : sensos are device that detect and collect data from the surrounding enviroment.

Role of Sensos used to measure physical Conditions such ass-

- Temperature
- Light
- Motion

- Convert the real world Signal into digital data Sensos are the first step in IoT because without data collection, the System cannot function.

CONNECTIVITY : After data is collected it sent to other devices or Serves thought Connectivity.

Role of Connectivity: Transfer data from sensos to the cloud or Serves.

- Wifi
- Bluetooth
- Mobile network

It enable communication with in devices. ie A smartth watch send its data with the help of bluetooth to mobile.

Q. No. 5 (Page 2)

Data Processing: it reflect to Anaylysis and Action. data is recived it also excuate. or generate useful results.

Role of Data Processing:

It analyze and collect data. Make desions based on programing. It may used artifical intelligence. send command back to devices.

- A smart thermostate temprature automatically.

Q. No. 6 (Page 1)

LONG QUESTION

Digital Communication it is the process of sharing information ideas or messages using digital devices and technologies such as computers, smartphones and the internet allow people to communicate easily over long distance using text, video or multimedia.

Digital Tools

E-mail: is the formal digital communication tool used for send messages over the internet.

Uses

- Professional communication
- Sending documents and reports.

Suitable

- Businesses, teachers and organizations

Advantages

- Reliable and Secure
- Can attach files.

Social Media Platforms: Social media allows user to share ideas and information and updates with large audience.

Q. No. 6 (Page 2)

Advantage
- Fast Communication
- Wide reach

Examples: - Face book, Instagram, Twitter.

Uses
- Public awareness
- Marketing and Promotions

Video Conferences Tools These allow real-time face-to-face communication over the internet.

Example: - Zoom, - Google Met.

Uses
- Online Classes
- Business meetings

Advantages:
- Interactive communication
- Saves travel time.

Presentation Software tools help is visually explaining ideas using slides

Example
- PowerPoint, - Google Slides

Uses
- Teaching, - Buisness promotion

Advantage
- Easy to understand